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**Patent Claims**

1. A method for producing an optical fiber coil for a fiber-optic measuring device, characterized in that, in order to reduce nonreciprocal variations in the light path, in the fiber coil during winding of the same, the optical fiber is applied to a winding body in a quadrupole winding pattern in directly successive winding layers such that the turns in the individual winding layers have, at irregular spacings, as large a number of crossover points as possible.
2. The method as claimed in claim 1, characterized in that the optical fiber is wound in each winding layer such that the generally irregular spacings between the individual turns correspond on average approximately to half the diameter of the optical fiber.
3. An optical fiber coil of a fiber-optic Sagnac interferometer, characterized by a winding body (1) to which the optical fiber (4) is applied in directly successive winding layers in a quadrupole winding pattern with a plurality of irregularly spaced crossover points in the individual winding layers.
4. The optical fiber coil as claimed in claim 3, characterized in that variable spacings between the turns are present in each winding layer, these spacings corresponding on average, however, to half the diameter of the optical fiber.
5. The optical fiber coil as claimed in claim 3 or 4, characterized in that the first layer of turns of the optical fiber (4) is applied to the winding body (1) directly and without fixing or buffer means.

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6. The optical fiber coil as claimed in claim 3 or 4, characterized in that a fixing or buffer means is present between the winding layers.